CHARACTERISTICS OF PREGNANT WOMEN WITH HYPERTENSION

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Abstract, Background: The maternal mortality rate (MMR) is still substantial, around 830 women die from complications related to pregnancy or childbirth worldwide every day, and about 303,000 women die during and after pregnancy and childbirth. The main causes of maternal death are hemorrhage (mostly postpartum hemorrhage, hypertension during pregnancy (pre-eclampsia and eclampsia) sepsis or infection, and indirect causes are mostly due to interactions between pre-existing medical conditions and pregnancy. Risk factors that predispose to hypertension in pregnancy are family history of pre-eclampsia, preeclampsia in previous pregnancies, multifetal pregnancy, obesity, nulliparity, diabetes, chronic hypertension, and maternal age. The aim is to identify the effect of the characteristics of pregnant women with hypertension in the working area of the Karawang District Health Center.
Method: The design of this study was analytic observational with a cross sectional approach, where cause and effect variables were measured and collected at one time. The study was in the working area of the Karawang District Health Center, the population of all pregnant women with hypertension with a sample of 52 respondents, the technique of taking samples was accidental. sampling, the data were analyzed by chi square test.
Result: Most respondents aged 20-35 years as much as 80.8%, most education is junior high school 65.4%, unemployment 82.7%, birth spacing 2 years 61.75%, the incidence of hypertension is mostly experienced by multigravida 61.75%, The results of bivariate analysis showed that there was a correlation between age and hypertension in pregnant women, p value = 0.050 with an OR value = 3.750, there was a correlation between education and hypertension in pregnant women. obtained p value = 0.012, there is no correlation between work and hypertension in pregnant women. obtained p value = 0.390 with OR value = 0.482, there is no correlation between birth spacing and hypertension in pregnant women with p value = 0.147 OR value = 0.321.
Conclusion: Age and education are associated with hypertension in pregnancy.

Keywords: Characteristics, Pregnant Women, Hypertension

Background

Maternal Mortality Rate (MMR) is the main indicator of public health status and is set as one of the Sustainable Development Goals (SDG's). According to the World Health Organization (WHO), the maternal mortality rate (MMR) is still substantial, around 830 women die from complications related to pregnancy or childbirth worldwide every day, and about 303,000 women die during and after pregnancy and childbirth. The maternal mortality rate in developing countries reaches 239/100,000 live births. Whereas in developed countries it is 12/100,000 live births (1)

The main causes of maternal death are hemorrhage (mostly postpartum hemorrhage, hypertension during pregnancy (pre-eclampsia and eclampsia) sepsis or infection, and indirect causes are mostly due to interactions between pre-existing medical conditions and pregnancy.(2)

Hypertension in pregnancy can be classified into pre-eclampsia, eclampsia, chronic hypertension in pregnancy, chronic hypertension with pre-eclampsia, and gestational hypertension. (3)
Hypertension in pregnancy is common and is a major cause of maternal mortality, and has other serious effects during childbirth. Hypertension in pregnancy occurs in 5% of all pregnancies(4). In the United States, the incidence of pregnancy with hypertension reaches 6-10%, where there are 4 million pregnant women and an estimated 240,000 are accompanied by hypertension every year. Hypertension is a risk factor for stroke and its incidence increases in pregnancy where 15% of maternal deaths in America are caused by intracerebral hemorrhage.(5) The five biggest causes of maternal death in Indonesia are hypertension in pregnancy.(6)

Hypertension in pregnancy (HIP) is a condition in which there is an increase in blood pressure of pregnant women accompanied by proteinuria which is a complication of pregnancy and affects the mother and fetus, becoming one of the main causes of maternal and perinatal mortality and morbidity.(7)
Hypertension is an increase in blood pressure that exceeds the normal limit, namely systolic blood pressure 140 mmHg and or diastolic blood pressure 90 mmHg. Hypertension in pregnancy is one of the causes of morbidity and mortality in pregnant women in addition to bleeding and infection. The incidence of hypertension in Indonesia in hypertension is also a cause of perinatal death. The incidence of perinatal mortality due to hypertension is around 30-40%.(8)

The highest cause of maternal death in Karawang Regency in 2018 was caused by 30% by Hypertension in Pregnancy (HIP), 26% due to bleeding, 12% infection and 32% others. The period of maternal mortality is 58% during childbirth, 14% during childbirth, and 28% during pregnancy. The highest distribution of maternal deaths in 2018 was in the working areas of the Cikampek, Adiarsa, Majalaya, Tempuran, Rengasdengklok, Teluk Jambe, Klari, Cicinde, Medangasem and Tirtajaya health centers.(9)

Risk factors that predispose to hypertension in pregnancy are family history of pre-eclampsia, preeclampsia in previous pregnancies, multifetal pregnancy, obesity, nulliparity, diabetes, chronic hypertension, and maternal age.(10) The correlation between an increasing maternal age is proportional to the incidence of HIP and increasing over the age of 35 years.(11) As many as 85% of HIP occur in the first pregnancy or the safest gravidity is the second and third pregnancies. Gravidity is a factor associated with the onset of hypertension in pregnancy. The frequency of hypertension as a complication of pregnancy is higher in primigravida than in multigravida. This is owing to the formation of blocking antibodies against imperfect antigens and Human Leukocyte Protein G (HLA-G) which plays an important role in modulating the immune response, so that the mother rejects the products of conception (placenta) or there is maternal intolerance to the placenta and hypertension occurs during pregnancy. (12)

Method

The design of this research is analytic observational approach cross sectional, where cause and effect variables are measured and collected at one time. The research was carried out in the working area of the Karawang Regency Health Center in 2020. Data collection instruments were questionnaires, sphygmomanometer and stethoscope. The population in this study were

all pregnant women diagnosed with hypertension in the working area of the Karawang Health Center, the number of samples was 52 respondents with inclusion criteria: willing to be research subjects, pregnant women in the I-III trimesters, the general condition of the mother was good. Exclusion criteria: in pharmacological therapy

The sampling technique was accidental sampling. The data obtained were processed and analyzed by the chi square test.

Result

Characteristics of pregnant women

Table 1. Distribution of respondent characteristics

Characteristic	Total	
	n	%
Age		
- <20> years	10	19,2
- 20-35 years	42	80,8
Education		
- Elementary	3	5,8
- Junior High	34	65,4
- Senior/Vocational	14	26,9
- University	1	1,9
Occupation		
- Employment	9	17,3
- Unemployment	43	82,7
Birth Spacing		
- ≤ 2 years	20	38,5
- > years	32	61,5
Gravida		
- Primigravida	20	38,5
- Multigravida	32	61,75
Total	52	100

Table 1. Shows most respondents aged 20-35 years as much as 80.8%, most education is junior high school 65.4%, most respondents unemployed 82.7%, birth distance 2 years 61.75%, hypertension is experienced a lot by multigravida 61.75%

The rcorrelation between the characteristics of pregnant women and hypertension

Table 2. The relationship between the characteristics of pregnant women and hypertension in pregnancy in 2020

Characteristics	Hypertension				Total	P Value (OR)
	Medium		Mild			
	n	%	n	%		
Age						
1.<20> yrs	6	60	4	40	10	0,050
2. 20-35 yrs	12	28,6	30	74,4	43	(3,750)
Education						
1.SD	3	100	0	0	3	0,012
2.SMP	8	23,5	26	76,5	34	
3.SLTA	6	42,9	8	57,1	14	
4.PT	1	100	0	0	1	
Occupation						
1.Employment	2	22,2	7	77,8	9	0,390
2.Unemployment	16	37,2	27	62,8	43	(0,482)
Birth Spacing						
1. ≤ 2 years						
2.> 2 years	4	20,0	16	80.0	20	0,147
	14	43,8	18	56.2	32	(0,321)
Gravida						
1.Primigravida	9	45,0	11	55,0	20	0,34
2. Multigravida	9	28,1	23	71,9	32	(2,090)

Correlation between age and hypertension in pregnant women

The results of the analysis showed that there was a significant correlation between age and hypertension in pregnant women. This is based on the results of the analysis with the chi square test obtained p value = 0.050 where the p value is smaller than 0.05 (0.050 0.05) meaning that there is a relationship between age and the incidence of hypertension in pregnant women with an OR value = 3.750 meaning that respondents aged <20 years and >35 years have a 3,750 risk of experiencing hypertension in pregnancy compared to respondents aged 20-35 years. The results of this study are reinforced by the results of research conducted by Yunianti [13] there is a correlation between maternal age and the incidence of hypertension in pregnant women at the Rajabasa Indah Health Center in 2019, with an OR (Odds Ratio) value of 3.934, which means that the age of the mother is at risk of 3.934 times greater for the occurrence of hypertension in pregnant women. Research

results by Sukfitriant[14] obtained the value of OR = 2,566. This means that pregnant women with high risk age have 2,566 times risk of suffering from hypertension compared to pregnant women with low risk age. Previous research conducted by Pemiliana [15] there is a significant correlation between the age of pregnant women and hypertension in pregnancy at the Setabu Public Health Center, North Kalimantan Province. Nelawati's Research [16] the results of statistical tests with chi-square obtained p = 0.002 (p <α = 0.05). there is a correlation between the age of pregnant women and hypertension. Kaimudin's study [17] tthere is a correlation between maternal age during pregnancy and the incidence of hypertension at RSU GMIM Pancaran Kasih Manado. Sutiati study [18] the results of statistical tests obtained p-value = 0.053 < 0.1 which means Ho is rejected Ha is accepted meaning that there is a significant correlation between maternal age and increasing cases of hypertension in pregnancy. Basri's research results[19] there is a correlation between age and the incidence of hypertension in pregnant women with p value = 0.000. The results of this study prove the theory that age is a risk factor for hypertension in pregnancy.

Pregnancy at maternal age (<20 and >35 years) is a high-risk pregnancy that can cause complications in pregnancy. Supervision of pregnant women under the age of 18 years needs to be considered because anemia often occurs, hypertension leads to preeclampsia/eclampsia, birth weight low birth, pregnancy with infection, complications of the delivery process which ends with surgery. The social aspect that often accompanies pregnant women at a young age is unwanted pregnancy, drug addiction and/or smoking, the meaning and benefits of antenatal care that are not paid attention to.

Social aspects can cause difficulties for fetal growth and development and complications during the delivery process [20]. This is reinforced by that pregnancies included in the obstetric risk group, i.e pregnancies that are influenced by 4T, include being too old at >35 years old, too young at <19 years old, too often with mothers who gave birth >3 times and too close to the distance. giving birth <2 years.[21] Accretion age of women is associated with changes in the cardiovascular system and theoretically PE is associated with pathology in the endothelium which is part of the blood vessels. [22]

Correlation between education and hypertension in pregnant women

The results showed that there was a significant correlation between education and hypertension in pregnant women. This is based on the analysis with the chi square test obtained p value = 0.012 where the p value is smaller than 0.05 (0.012 <0.05) which means that there is a correlation between education and hypertension in pregnant women. This research is in line with the research of Imaroh[23] there is a significant correlation between education and the incidence of gestational hypertension in pregnant women, p value = 0.032 (p <0.05), In addition, the OR value = 5.278 (95% CI = 1.203 –23.158), indicating that the education of pregnant women is 9 years 5.2 times greater risk of developing gestational hypertension than pregnant women with education <9 years. Mothers with basic education (SD-SMP) had a risk of developing hypertension (pre-eclampsia) during pregnancy of 4.1 times and had a significant correlation (p = 0.004).[24]

Employment Correlation with Hypertension in Pregnancy

The results showed that there was no significant correlation between work and hypertension in pregnant women. This is based on the analysis with the chi square test obtained p value = 0.390 where the p value is greater than 0.05 (0.390 > 0.05) which means that there is no correlation between work and hypertension in pregnant women with an OR value of 0.482 meaning that respondents who work have a 0.482 risk of experiencing hypertension in pregnancy compared to respondents who do not work. The results are in accordance with Saraswati's research[25] there is no significant correlation between the type of work with the incidence of preeclampsia in pregnant women. This is based on the results of the analysis with the chi square test which obtained p value = 0.287 where the p value is greater than 0.05 (0.287 > 0.05) as well as strengthened by previous studies there is no significant correlation between occupation and the

classification of pre-eclampsia. Statistically there is no correlation between work and hypertension in pregnancy.[26] However, the data shows that hypertension is mostly experienced by mothers who do not work as much as 82.7%. This does not agree with Hersianna (27) Pregnant women who work responsible for household chores have a five times greater risk of complications.

There is no correlation between work and hypertension in pregnancy, it is psychologically possible that pregnant women who work or do not work experience fear, anxiety and various emotions that arise suddenly. Unstable psychological changes occur in the first trimester and are usually caused by physical discomfort, for example, the body that used to be slim is now enlarged, so that it can reduce self-confidence, in the final trimester pregnant women are no longer able to move freely, thus pregnancy is a sufficient period difficult for a mother, therefore pregnant women need support from various parties, especially husbands so that they can go through the process of pregnancy to delivery safely and comfortably. Maintaining the condition of the body of pregnant women to avoid physical stress (tiredness due to work at home and outside the home) so as to be able to bring the mother through the pregnancy period while staying healthy. Pregnant women are also advised to undergo pregnancy with a happy feeling by not being stressed or excessively anxious and also able to maintain a healthy lifestyle in everyday life.

Correlation between Birth Distance and Hypertension in Pregnancy

The results showed that there was no significant correlation between birth spacing and hypertension in pregnant women. This is based on the analysis with the chi square test obtained p value = 0.147 where the p value is greater than 0.05 (0.147 > 0.05) which means that there is no correlation between birth spacing and hypertension in pregnant women and the OR value = 0.321 means that respondents with a birth spacing of <2 years have a 0.390 risk of developing hypertension in pregnancy compared to respondents with a birth spacing of 2 years. The factor of pregnancy interval <2 years has a risk of developing preeclampsia compared to mothers with a gestational interval of 2 years or more. Mothers who give birth with a birth interval of 4 years have a risk of preeclampsia by 0.81 times than mothers with a birth interval of 5 years (OR=0.81) The results of this study are not in line with Widiastuti's study [28] there is a correlation between gestational distance and the occurrence of preeclampsia in pregnant women at the Kaliwungu Kendal Health Center. Nurlela's Research [29] there is a significant correlation between birth spacing and the incidence of pre-eclampsia in pregnant women at the Siti Fatimah Mother and Child Hospital in Makassar and the value of r = 0.600 means that the strength of the correlation between birth spacing and the incidence of pre-eclampsia is strong.

Birth spacing is one of the predisposing factors for pre-eclampsia. The ideal birth spacing is a good time limit for pregnancy for both mother and child because it can reduce the incidence or maternal mortality and problems in pregnancy such as pre-eclampsia.[30] [31]

Correlation of Gravida Status with Hypertension in Pregnant Women

The results showed that there was no significant correlation between gravida status and hypertension in pregnancy . This is based on the results of the analysis with the chi square test which obtained p value = 0.340 where the p value is smaller than 0.05 (0.340 > 0.05) which means there is no correlation between gravida status and hypertension in pregnant women with OR = 2.090 it means that respondents who are primigravida have a 2,2,090 times risk of experiencing hypertension in pregnancy compared to respondents who are multigravida. The results of this study are not in line with Saraswati's research[25] There is a significant correlation between gravida status and the incidence of preeclampsia in pregnant women. This is based on the results of the analysis with the chi square test obtained p value = 0.009 where the p value is smaller than 0.05 (0.009 < 0.05) which means that there is a correlation between gravida status and the incidence of preeclampsia in pregnant women and the OR value = 2.173 it means that respondents who are primigravida have a risk of 2,173 times experiencing the incidence of preeclampsia compared to respondents who are multigravida. Imaroh Research[23] there is a significant correlation between gravida and the incidence of

gestational hypertension, obtained OR = 9.067 (95% CI = 2.306 - 35.650), primigravida pregnant women have a 9.1 times greater risk of developing hypertension in pregnancy than pregnant women with multigravida. Widiastuti Research [28] there is no correlation between gravida and the occurrence of preeclampsia in pregnant women at the Kaliwungu Kendal Health Center. This is not in accordance with the immunological theory where primigravida have a greater risk of hypertension in pregnancy when compared to multigravida.[32]

There is no significant correlation between gravida and hypertension in pregnancy, possibly because the majority of respondents are in gravida who are not at risk as much as 61.75% where the average gravida experiences 2-4 pregnancies so that the mother is in the safe category, in this multigravida it is not Pregnancy complications are often encountered because of this pregnancy the antibody block has been completely formed.[33]

Conclusion

Based on the results of the study, it can be concluded that the characteristics of pregnant women with hypertension are at most 20-35 years old, junior high school education, not working, birth spacing 2 years, multigravida, characteristics of pregnant women who have a correlation with hypertension in pregnancy, namely age and education variables.

Acknowledgement

1. DR. H. Osman Syarif, MKM, as Director of Poltekkes, Ministry of Health, Bandung.
2. DR. Roro Nurfauziah, SKM, MKM, Section UPPM Poltekkes Bandung
3. Head of the Karawang District Health Office

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